Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CRAIG A. RODERICK

Appeal No. 1999-1745
Application No. 08/657,619

ON BRIEF

Before CALVERT, FLEMING, and GONZALES, Administrative Patent Judges.

CALVERT, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 and 2. Claims 3 to 12, the other claims in the application, have been indicated as allowable.[1]

The claims on appeal are drawn to a plasma system, and

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[1]Claims 10 and 12 were also finally rejected, but the examiner states on page 2 of the examiner's answer and in the Advisory Action of April 27, 1998, respectively, that the rejection of these claims has been overcome.

are reproduced in Appendix A of appellant's brief.

The references applied in the final rejection are:

Anderson et al. (Anderson)	5,519,215	May 21, 1996
Collins et al. (Collins)	5,556,501	Sep. 17, 1996 (filed Apr. 1, 1993)

Claims 1 and 2 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Collins in view of Anderson.[2]

The basis of the rejection, as set forth in the first Office action (Paper No. 4, June 24, 1997) is:

> Collins et al teach the claimed subject matter except for showing use of capacitors connected to the coil terminal ends. However, as set forth in Anderson et al it is conventional to connect capacitors to the coil ends in a plasma generation system to provide a more efficient and controllable power supply and plasma generation. In view of this teaching it would have been obvious to modify Collins et al to use this type of power supply connection to provide a more efficient coupling of the plasma to the device.

After fully considering the record in light of the arguments presented in appellant's brief and in the examiner's

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[2]The examiner's statement in section (9) of the answer that "[n]o prior art is relied upon by the examiner in the rejection of the claims under appeal" is obviously incorrect.

answer, we conclude that the rejection is well taken.

Appellant does not disagree with the examiner's finding that Collins discloses all the subject mater recited in claims 1 and 2 except for first and second capacitors connected as claimed. In Figs. 4 to 9 and col. 13, lines 8 to 34, Collins discloses various coil-capacitor arrangements, wherein variable capacitance T integral to the source antenna (coil) 30 is used to tune the source to resonance, and load means (variable capacitance) L "is provided to match the input impedance of the source antenna 30 to the output impedance of the associated [RF] power generator 31 (or transmission line 31C)" (col. 13, lines 9 to 14). However, Collins does not disclose two capacitors coupled as recited in claim 1.

Anderson discloses a mass spectrometer having an RF power source 3, a chamber 1 in which a plasma is generated, power being coupled thereto from coil 2, and two capacitors coupled as recited in claim 1, i.e., a first capacitor C_2 through which one terminal of the coil is coupled to a reference potential (ground), and a second capacitor C_3 through which the second terminal of the coil is coupled to the power source 3. Capacitors C_2 and C_3 are variable, and together with

variable capacitor C_1 constitute an impedance matching circuit 7 (col. 4, lines 9 to 15). The capacitors are adjusted by magnitude and phase detectors 8 to maintain an impedance match between the power source and the load (col. 4, lines 15 to 34).

Appellant argues that one of ordinary skill in the art would not have been motivated to modify Collins in view of Anderson as proposed by the examiner because although the Collins and Anderson systems both use plasmas, they perform entirely different functions (fabricating devices vs. mass spectrometry). In particular, Anderson discloses that impedance matching circuit 7 provides a means for altering the axial component of the electromagnetic field, which, appellant asserts, has no relevance to the plasma reactor of Collins (brief, page 9).[3] Also, appellant argues that Anderson has nothing to do with the wormholing and arcing problems which the present invention addresses and the examiner "has provided no valid or legitimate motivation to combine the capacitor arrangement of Anderson et al. with the plasma reactor of Collins et al." (brief, page 10).

These arguments are not persuasive. Even assuming arguendo that a function of Anderson's circuit 7, altering the

[3]At page 5 of the answer, the examiner states that altering the axial component of the electromagnetic field is also used in reactors such as appellant's. Appellant has not controverted this statement by filing a reply brief, or otherwise.

axial component of the electromagnetic field, would not be a consideration with the Collins system, Anderson's circuit 7 is nevertheless also disclosed as a circuit which performs the function of matching the impedance between the power supply and coil of a plasma chamber. Since Collins discloses, as noted above, that an impedance matching means should be provided in such a coil circuit, we agree with the examiner that it would have been obvious to use the Anderson circuit 7 as that means, this being simply the selection of a particular impedance matching circuit taught by the prior art. One of ordinary skill would have been particularly motivated to use the Anderson circuit by the fact that it permits matching the impedance automatically in response to changes in load, as disclosed by Anderson at col. 4, lines 16 to 26.

Although Anderson may not be concerned with the problems addressed by appellant's invention, that does not affect the propriety of combining Collins and Anderson. "As long as some motivation or suggestion to combine the references is provided by the prior art taken as a whole, the law does not require that the references be combined for the reasons contemplated by the inventor." In re Beattie, 974 F.2d 1309, 1312, 24

USPQ2d 1040, 1042 (Fed. Cir. 1992). See also In re Kemps, 97 F.3d 1427, 1430, 40 USPQ2d 1309, 1311 (Fed. Cir. 1996).

Accordingly, the rejection will be sustained.

Conclusion

The examiner's decision to reject claims 1 and 2 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

IAN A. CALVERT Administrative Patent Judge	)	
MICHAEL R. FLEMING Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
JOHN F. GONZALES Administrative Patent Judge	)	

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